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NATIONAL COMMUNICATIONS FROM PARTIES NOT INCLUDED IN ANNEX I TO THE CONVENTION

Report of the Consultative Group of Experts to the subsidiary bodies

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List of abbreviations

ALGAS	Asia Least-cost Greenhouse Gas Abatement Strategy
CGE	Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention
CH_4	Methane
CO_2	Carbon dioxide
DSSAT	Decision Support System for Agrotechnology Transfer
ENPEP	Energy and Power Evaluation Programme
ENSO	El-Niño-Southern Oscillation
GCM	General circulation models
GCOS	Global Climate Observing System
GEF	Global Environment Facility
GHG	Greenhouse gas
GOOS	Global Ocean Observing System
GTOS	Global Terrestrial Observing System
GTZ	Gesellschaft für Technische Zusammenarbeit (German Technical Cooperation Agency)
HFC	Hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
LEAP	Long-range Energy Alternatives Planning system
LUCF	Land-use change and forestry
MAGICC-SCENGEN	Model for the Assessment of Greenhouse-Gas Induced Climate Change and a Scenario Generator
MARKAL	MARKet ALlocation model
N_2O	Nitrous oxide
NCCSAP	Netherlands Climate Change Studies Assistance Programme
NCSP	National Communications Support Programme
PFC	Perfluorocarbon
SBSTA	Subsidiary Body for Scientific and Technological Advice
SF_6	Sulphur hexafluoride
USCSP	United States Country Studies Program
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme

PART ONE

I. MANDATE

1. The Conference of the Parties at its fifth session, pursuant to decision 8/CP.5, decided to establish the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE), with the objective of improving national communications from Parties not included in Annex I to the Convention (non-Annex I Parties), in accordance with the annex to this decision (FCCC/CP/1999/6/Add.1).

2. The annex to decision 8/CP.5 established that experts of the CGE shall be appointed as follows: five experts from Africa, five experts from Asia, five experts from Latin America and the Caribbean and six experts from Parties included in Annex I to the Convention (Annex I Parties). The experts representing each developing region shall be appointed by the Parties from that region in order to ensure geographical balance. The experts from Annex I Parties shall be appointed by the Annex I Parties to the Convention. In addition, up to three experts from organizations with relevant experience shall be selected by the secretariat to participate in the group. The chairmen of the subsidiary bodies shall be notified of these appointments.

3. The annex to this decision established that the CGE shall meet twice in the year 2000, each time immediately prior to meetings of the subsidiary bodies.

4. The annex to the decision also established that each year there will be one workshop in each of the regions of Africa, Asia and Latin America and the Caribbean, to consider both regional and subregional experiences. The five non-Annex I Party experts from their respective regions will conduct these workshops. The agendas for the workshops will be developed by the participating experts, in consultation with the UNFCCC secretariat, and will ensure adequate coverage of the issues identified in paragraph 3 above. Expert/resource persons at these workshops will be drawn from the roster of experts, and limited to an additional 15 experts from the region, and five experts from Annex I Parties.

5. The annex also provided the terms of reference of the CGE as follows:

(a) Exchange experience and information on the preparation of national communications, including the consideration of subregional experience, referred to in paragraphs 2 and 4 above, on the basis of agendas to be decided by consultation among the participants at each level of meetings;

(b) Consider, as appropriate, the needs for and availability of financial resources and technical support, and the identification of barriers to and gaps in this support;

(c) Consider, as appropriate, information in national communications from non-Annex I Parties in accordance with the guidelines for the preparation of initial national communications by Parties not included in Annex I to the Convention contained in the annex to decision 10/CP.2;

(d) Review existing activities and programmes to facilitate and support the preparation of national communications by non-Annex I Parties with a view to identifying gaps

and making recommendations for better coordination of these activities and programmes in order to enhance the preparation of national communications;

(e) Identify the difficulties encountered by non-Annex I Parties in using the guidelines contained in the annex to decision 10/CP.2 and in the use of the Intergovernmental Panel on Climate Change (IPCC) methodologies and other models, and make recommendations for improvement where appropriate;

(f) Identify any analytical and methodological issues, including technical problems in the preparation and reporting of greenhouse gas (GHG) inventories, and in particular with respect to the improvement of data collection, the development of local and regional emission factors and activity data, and the development of methodologies, where appropriate, with a view to enhancing the quality of future inventories;

(g) Examine national communications submitted by non-Annex I Parties, in particular greenhouse gas inventories, with a view to arriving at recommendations on ways of overcoming difficulties in the use of the IPCC methodologies and the UNFCCC guidelines relating to inventories contained in the annex to decision 10/CP.2, and also recommendations on possible innovations, and produce reports thereon;

(h) Encourage interaction among experts from all Parties.

6. The annex to decision 8/CP.5 established that the recommendations of the CGE on the above-mentioned terms of reference shall be forwarded to the subsidiary bodies for their consideration.

II. ORGANIZATION OF WORK

7. In accordance with paragraphs 3 and 4 above, the CGE organized and conducted three meetings, three regional workshops and one interregional workshop between June 2000 and March 2001 to facilitate the exchange of experience and information regarding the preparation of national communications.

8. The regional workshops of the CGE were held in Nairobi, Kenya (Africa), Bangkok, Thailand (Asia) and Mexico City, Mexico (Latin America and the Caribbean); the interregional workshop was held in Panama City, Panama. A total of 94 experts from 70 non-Annex I Parties nominated by their governments participated in these workshops.

9. In each regional workshop, experts considered regional experience in the preparation of national communications from Parties which had submitted their national communications to the secretariat, and from Parties which are in the process of preparing their national communications. At the interregional workshop, the conclusions and recommendations were further elaborated and integrated with the recommendations of the regional workshops. Experts at the four workshops discussed issues, problems and constraints relating to the preparation of various elements of a national communication, in accordance with the agendas approved at each workshop.

10. The elements of a national communication considered at the workshops were as follows: national GHG inventories; vulnerability and adaptation assessment, research and systematic

observation; GHG abatement analysis; education, training and public awareness; and financial and technical support. Reports of the CGE workshops which contain recommendations to be considered by the CGE and Parties are contained in documents FCCC/SBI/2000/INF.4, FCCC/SBI/2000/INF.9, FCCC/SBI/2000/INF.10 and FCCC/SBI/2001/INF.1.

11. The CGE established six task groups, constituted by members, to examine specific elements of the 50 national communications and 51 national inventories already submitted to the secretariat, and provide their findings to the CGE. These task groups, established at the second meeting of the CGE, addressed issues, problems and constraints relating to national GHG inventories; vulnerability and adaptation assessment; GHG abatement analysis; education, training, public awareness and research and systematic observation; information and networking; and support programmes.

12. At each meeting of the CGE, members discussed the reports of the regional workshops relating to the preparation of national communications and those arising from their own analysis of national communications. The reports of the first, second and third meetings of the CGE are contained in documents FCCC/SBI/2000/16, FCCC/SBI/2001/2 and FCCC/SBI/2001/3.

13. Information for the analyses by the CGE, its task groups, and national experts from non-Annex I Parties at the meetings and workshops, was provided by a preliminary compilation and synthesis, prepared by the secretariat, of 50 national communications submitted to the secretariat as at 15 April 2001. The experiences and information on constraints and problems were provided by participating experts from Parties which have not yet submitted their national communications to the secretariat.

14 Additional information on funding and support programmes was provided by the National Communication Support Programme (NCSP) of UNDP/UNEP/GEF and Annex II Parties.

15. Furthermore, the CGE members exchanged views and commented on various elements of the national communications during the course of their work. This process was facilitated by use of the Internet, through a list server developed and maintained by the secretariat.

III. SCOPE OF REPORT

16. Part two focuses on the analyses provided by the regional and interregional workshops, the CGE task groups and the CGE members on various elements of each national communication. These elements are outlined as follows: national circumstances; national GHG inventories; vulnerability and adaptation assessment; research and systematic observation; GHG abatement analysis; education, training and public awareness; information and networking; and financial and technical support programmes.

17. Part three of this report contains recommendations, based on the issues analysed in part two by the CGE relating to financial and technical support, improvement of the IPCC methodologies and other models, and improvement of the UNFCCC guidelines.

IV. POSSIBLE ACTION BY THE SUBSIDIARY BODIES

18. The subsidiary bodies may wish to take note of the information provided in this document, with a view to improving the preparation process for national communications by non-Annex I Parties.

19. In particular, the subsidiary bodies may wish to consider the recommendations of the CGE contained in part three of this report, with a view to initiating a process of revising the guidelines for the preparation of national communications, and to consider, as appropriate, the needs for financial and technical support.

20. In addition, the subsidiary bodies may wish to make information contained in this report available to the IPCC with a view to improving the IPCC methodologies and models.

21. The subsidiary bodies may also wish to provide further guidance for the future work of the CGE in the process of improving the preparation of national communications.

PART TWO

I. NATIONAL CIRCUMSTANCES

22. The CGE addressed the subject of improving the reporting of national circumstances, and made corresponding recommendations in accordance with subparagraphs 5 (a) and 5 (c) of its terms of reference.

23. In the context of national communications, decision 10/CP.2 calls for Parties to elaborate on their national circumstances. As identified in the annex to decision 10/CP.2, these include information on factors such as national and regional development priorities and economic, geographic, and climatic features, as well as institutional and social indicators. To facilitate the process, table 1 of the UNFCCC guidelines was appended to assist countries in providing information in that format. In general, the section on national circumstances has been developed with the aim of providing information on the wider geographic, policy and institutional contexts within which non-Annex I Parties exercise their commitments and obligations under the UNFCCC.

24. In order to promote the usefulness of the national communications, it is important to recall that the UNFCCC is one of the conventions which emanated from the United Nations Conference on Environment and Development in 1992 and the fulfilment of obligations must be seen as an integral part of striving towards sustainable development for all nations. While it is clear that the achievement of sustainable development in non-Annex I Parties requires a different approach from that used in Annex I countries, the integration of climate change issues into government planning remains an essential criterion for successful implementation of the Convention and sustainable development efforts.

II. NATIONAL GREENHOUSE GAS INVENTORIES

25. The CGE addressed the issue of improving the support for and reporting of national greenhouse gas inventories, and made corresponding recommendations in accordance with subparagraphs 5 (a), 5 (c), 5 (f) and 5 (g) of its terms of reference.

Methodological issues: Use of the Revised 1996 IPCC Guidelines

26. Many problems were identified by Parties using the Revised 1996 IPCC Guidelines. Most of these problems were related to the land-use change and forestry sector (LUCF). Many countries reported that local classification of forests is different from the classification system contained in the IPCC Guidelines. In addition, Parties indicated that the terms used in the LUCF section of the IPCC Guidelines are not well understood by experts in non-Annex I Parties, and therefore require better explanation. Furthermore, in some cases the IPCC Guidelines are also not clear enough for consistent reporting by Parties, for example, for estimating emissions or sequestration in managed forests. Problems were also identified in relation to the appropriateness of the IPCC default values presented, for example, for growth rates of biomass and/or emission rates for carbon from soils and in estimating fractions of biomass burnt on site, burnt off site or left to decay.

27. In the energy sector, biomass constitutes an important fraction of the energy used in the households and industries of many developing countries, and in some countries ethanol is used as an energy source in the transport sector. In addition, some Parties mentioned that it is not always clear in which source categories biomass emissions should be included.

28. In the agriculture sector, many developing countries have different classification systems for animals and agricultural soils from the one contained in the IPCC Guidelines. These differences in classification systems create difficulties in the choice and use of appropriate default emission factors.

29. The specific circumstances of waste disposal in many non-Annex I Parties are not fully reflected in methods for estimating waste emissions. For example, in these countries common solid waste practices involve burning and/or the use of open dumps. The IPCC Guidelines method for estimating methane emissions from solid waste disposal sites, which are rarely used in non-Annex I countries, may not be relevant due to the inadequate anaerobic conditions typical of these solid waste disposal sites.

30. The IPCC Guidelines lack references to peer-reviewed literature in languages other than English, and thus do not fully reflect the specifics of non-Annex I countries.

31. The IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, which could help to improve the quality of the national GHG inventories of non-Annex I Parties, is not available in other languages of the United Nations at present.

Reporting issues: Use of the UNFCCC guidelines

32. Although the UNFCCC guidelines explicitly state that, in fulfilling their commitments, the non-Annex I reporting Parties should use, as appropriate and wherever possible, the

Guidelines for the National Greenhouse Gas Inventories and the simplified default methodologies adopted by the IPCC, the use of the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories is not specifically mentioned. This is due to the fact that the Revised 1996 IPCC Guidelines adopted by the IPCC in September 1996 became available to Parties only after the adoption of decision 10/CP.2 in November 1996.

33. Over 70 per cent of reporting Parties used the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, as encouraged by the conclusions of the Subsidiary Body for Scientific and Technological Advice (SBSTA) at its fourth session. The CGE found that most Parties currently preparing their national communications are also using the revised Guidelines.

34. Although the UNFCCC guidelines encourage Parties to include, *inter alia*, perfluorocarbon (PFC) and sulphur hexafluoride (SF_6) emissions, they did not explicitly request the reporting of hydrofluorocarbon (HFC) emissions. At its fourth session, the SBSTA encouraged non-Annex I Parties to report actual emissions of these three gases.

35. All 51 Parties reporting on their inventories followed the UNFCCC guidelines and reported emissions of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). Four of these Parties also presented some information on PFC, SF_6 and HFC emissions.

36. Many Parties provided inventory information additional to that explicitly requested by the UNFCCC guidelines. Over 70 per cent of reporting Parties provided inventory data using the IPCC summary table 7A or modifications of that table which is more detailed than table II of the UNFCCC guidelines. For example, table II does not explicitly require the reporting of N_2O emissions from agricultural soils, and CH_4 from waste, which, for some countries, could represent a significant percentage of total emissions. Nevertheless, six out of 12 non-Annex I Parties reporting emissions using table II presented estimates for CH_4 emissions from waste, and 25 out of 37 non-Annex I Parties which used the IPCC summary table 7A for reporting their national GHG inventory provided estimates for N_2O emissions from agricultural soils.

37. Nineteen reporting Parties included IPCC worksheets when submitting their inventories and or national communications. These worksheets enhance transparent reporting of the inventory data and facilitate the sharing of inventory information among experts and countries. However, the notation keys indicated by the IPCC Guidelines, such as "not estimated (NE)" and "not occurring (NO)", were not widely used by the reporting Parties. This can lead to an erroneous interpretation of the effective level of reporting by a Party.

Data acquisition

38. In preparing national GHG inventories, many problems relating to the lack of activity data and the lack of appropriate emission factors have been encountered by non-Annex I Parties.

Activity data

39. Most non-Annex I Parties do not have sufficient resources to collect the necessary activity data from various sectors of the economy for the preparation of good quality national GHG inventories.

40. In the LUCF and agriculture sectors, a number of important activity data are either lacking or in many countries are not accessible due to the lack of adequate data collection and/or management systems. Many non-Annex I Parties reported a high level of uncertainty associated with activity data in these sectors. It is also difficult to obtain activity data in the necessary time-series for estimating more reliable emissions in some source categories of the LUCF sector.

41. In the energy sector, energy balances which contain activity data are lacking in some countries, particularly in Africa. The level of disaggregation of national energy balances is not always detailed enough for the purposes of the specific methodological approaches of the IPCC Guidelines.

42. Activity data for energy use (for example, for biomass combustion or kerosene) are particularly lacking in the informal and household sectors of the economy. Field surveys are needed to develop adequate activity data in these sectors.

43. In the industrial processes sector, Parties faced problems in collecting activity data from the private sector. Almost all reporting Parties lack systems for collecting data on PFCs, SF_6 and HFCs. Although these emissions may not seem relevant for many non-Annex I Parties, they might be important for Parties with relatively high levels of industrialization.

44. Appropriate information management systems for archiving and updating inventory data are needed. Such management systems could resolve some of the institutional problems identified by many non-Annex I Parties.

Emission factors

45. Default emission factors provided in the IPCC Guidelines for LUCF, agriculture, waste and fugitive methane emissions, as well as for non-CO_2 emissions from fuel combustion, do not often well reflect the national circumstances of many non-Annex I Parties. Therefore their use in inventory calculation increases the uncertainty of the estimates.

46. The IPCC Guidelines do encourage the development and use of national emission factors that suit national circumstances better than IPCC default emission factors. However, most non-Annex I Parties lack resources adequate to undertake these activities.

Institutional issues relating to the preparation and reporting of inventories

47. The continuity of the inventory preparation process in most reporting non-Annex I Parties is not assured at present due to frequent changes in technical staff and institutions involved in the process. In some cases, the process of inventory preparation has been interrupted, either because of a lack of funding or due to other changes leading to the redeployment of technical staff to

other areas. The preparation and updating of inventories on a systematic and continuous basis by a national team would help to improve the quality of inventories.

48. In most countries, climate change project coordinators are in charge of the implementation of the Global Environment Facility (GEF) enabling activity projects at national level. However, there are no permanent technical climate change secretariats to coordinate the technical work necessary for national GHG inventories and the preparation of national communications on a continuous basis.

49. Existing linkages between the organizations responsible for the preparation of the national inventories and other national organizations involved in the collection of activity data are weak in several non-Annex I countries. This could affect the quality and comprehensiveness of national GHG inventories.

Issues relating to capacity-building

50. In most non-Annex I countries, there is a lack of adequate institutional capacity to carry out research and training on climate change issues in support of the preparation and reporting of national GHG inventories. In others, where some capacity exists, it is often not optimally utilized.

51. The collection of activity data for preparing national GHG inventories is closely linked to the strengthening of the national capacity for promoting sustainable development, and should be considered as one of the primary objectives for capacity-building activities supported by multilateral and bilateral assistance. Improving systems for the collection of activity data is important not only because it enables the preparation of national GHG inventories, but also because it provides an important element of national economic and development planning.

52. The development of regional projects aimed at improving the national capacity for collecting, processing and archiving activity data, and the development of local and regional emission factors in all key sources, is needed and should, therefore, be encouraged.

III. VULNERABILITY AND ADAPTATION ASSESSMENT

53. The CGE addressed the issue of improving support for and the reporting of vulnerability and adaptation assessments, and made the corresponding recommendations in accordance with subparagraphs 5 (a), 5 (c) and 5 (e) of its terms of reference.

54. Analysis of the information on vulnerability and adaptation indicates that many non-Annex I Parties are highly vulnerable to the impacts of climate change, and that some of these Parties are already experiencing strong climatic stresses (floods, drought, salt water intrusion, desertification) which will be exacerbated by climate change. Small island States and countries with low-lying coastal areas are also very concerned about sea-level rises which could negatively affect their national economies.

55. Most vulnerability and adaptation assessments undertaken in non-Annex I Parties have been conducted using the IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations. Some Parties also used the United Nations Environment Programme (UNEP)

Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies, and a publication by the United States Country Studies Program entitled *Vulnerability and Adaptation Assessment: An International Handbook*.

56. Vulnerability and adaptation assessments were focused on the following sectors: agriculture, water resources, coastal zones and marine ecosystems, fisheries, human health and terrestrial ecosystems. Even when the choice of sectors was based on national circumstances, all Parties included the vulnerability to climate change of agriculture and water resources in their assessments. Some non-Annex I Parties used models such as the Decision Support System for Agrotechnology Transfer (DSSAT), a software which integrates crop growth models with crop, weather and soil data to analyse impacts of climate change on agricultural crops. Some Parties used national models for assessing impacts on water resources.

57. Many Parties used general circulation models (GCMs) for generating scenarios of climate change. Some of them used a simple climate model, known as the Model for the Assessment of Greenhouse-Gas Induced Climate Change, and a Scenario Generator (MAGICC-SCENGEN) to generate scenarios which indicated that their future socio-economic situation could exacerbate their vulnerability to climate change.

58. The CGE found that the availability of financial resources for vulnerability and adaptation assessments is not commensurate with the importance non-Annex I Parties place on vulnerability and adaptation issues. Where financial resources exist, Parties have found them difficult to access. There is also a lack of information on the programmes, donors and funds available. Other Parties found that studies could not be conducted in all sectors using the funds allocated to their enabling activity programmes and that financial resources were not readily available to purchase technical materials (including hardware and software) required to conduct vulnerability and adaptation assessments.

Methodological issues: Use of the IPCC Guidelines

59. The CGE found that non-Annex I Parties had many difficulties in applying the IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations. Many of these difficulties relate to the suitability of methods and tools, lack of national capacity to apply them, lack of data, and a lack of the institutional frameworks and financial resources required to undertake vulnerability and adaptation assessments.

60. The IPCC Guidelines are focused on assessing the consequences of changes in mean conditions; much less is known about extreme events, particularly in terms of how these events will respond to global warming, and how natural and human systems respond to changes in the magnitude and frequency of extreme events. There are also scientific and technical difficulties in dissociating potential impacts arising from climate change (as defined by the Convention) from those due to natural climatic variability.

61. Many non-Annex I Parties indicated that the sensitivities of mean atmospheric and oceanic conditions to increases in concentrations of GHGs suggest that extreme events may become the dominant source of climate change induced stresses. Climate change affects climate variability, including extreme events, and in many cases it is the extreme events that produce the

most identifiable impacts on natural and human systems. An improved understanding of climatic variability and the provision of assistance for disaster preparedness relating to extreme events is necessary, since this experience could provide insights into the choice of adaptation strategies and the capacity to adapt to climate change.

62. Many non-Annex I Parties also reported on the ways in which existing climate change scenarios constrain their ability to assess their vulnerability. Of particular note is the inability to develop scenarios for climatic and/or oceanic conditions at a national level with a resolution appropriate for sectoral studies.

63. One of the main features of the IPCC Guidelines is the projection of both environmental and socio-economic trends over time, with effects of climate change incorporated into the projections. The projections are often extended to a period when climate change will be a significant, or become the dominant, driver of change. In non-Annex I Parties, however, non-climate related changes in economic, social and environmental systems are poorly understood but are likely to dominate over the short term. This may affect such Parties' ability to make specific statements about the impacts attributable to climate change with a high degree of certainty.

64. Some non-Annex I Parties used qualitative tools to evaluate the socio-economic impacts, and others provided an analysis of integrated impacts across some sectors. However, impact models for human health, human settlements, some terrestrial ecosystems and service-oriented industries such as tourism were not available for use by Parties.

65. The IPCC Guidelines enable projections of changes in environmental and socio-economic systems to be made for various time frames. This increases the uncertainty of projections and decreases the relevance of such long time-scales, particularly with respect to the political processes of policy and decision-making.

66. The analytical methods provided by the IPCC Guidelines are often incompatible with local needs and capacities. Generally, qualitative descriptive studies were compatible with local capacities, but the more sophisticated diagnostic assessments and prognostic analyses typically require levels of information and expertise that are not widely and readily available in many non-Annex I Parties.

67. Internationally developed integrated assessment, policy development and decision support tools are not usually compatible with the nature and characteristics of societies, economies and environments of most non-Annex I Parties, and there is a need therefore to develop tools which are compatible with the information resources, technical capabilities, economic systems, policy development and decision-making processes.

68. The IPCC Guidelines do not adequately address the identification and evaluation of specific adaptation strategies, and the relative importance of subsistence farming and other forms of traditional lifestyle. The IPCC Guidelines have been found to be inadequate in addressing the needs of traditional management and decision-making practices, which are not well documented and are often anecdotal.

69. Adaptation was identified as a major issue but most non-Annex I Parties presented only a list of possible adaptation options without evaluating, prioritizing or costing them in their national communications. Some Parties presented action plans to implement adaptation strategies. The CGE found that information on adaptation options in agriculture, water resources and coastal zones was generally more detailed and included better management of resources, technological responses and development of research, monitoring and education, but information on options for other sectors was less detailed.

70. The integration of adaptation into long-term planning is clearly a next stage for almost all non-Annex I Parties. In some cases, adaptation options need to be considered at the regional level (international waters, for example) and in others, adaptation options need to be considered in a more general context including living standards, demography, legislation and sustainable development at the national level.

71. Many Parties have expressed the need for more work on integrated assessments, socio-economic assessments, identification of adaptation options and costing implications. Some Parties consider that, where possible, vulnerability and adaptation studies should be conducted at a regional or subregional level, particularly where a number of countries share natural resources such as coastlines and water resources within major catchments or river systems.

Reporting issues: Use of the UNFCCC guidelines

72. The CGE found that decision 10/CP.2 does not provide specific guidance for the reporting of vulnerability and adaptation, but indicates that Parties may "present information on their specific needs and concerns arising from the adverse effects of climate change..." (decision 10/CP.2, paragraph 5). The guidelines also indicate that each non-Annex I Party's initial communication should "seek to include, as appropriate, policy options for adequate monitoring systems and strategies for climate change impacts on terrestrial and marine ecosystems", and should include "policy frameworks for implementing adaptation measures and response strategies in the context of coastal zone management, disaster preparedness, agriculture, fisheries, and forestry, with a view to integrating climate change impact information, as appropriate, into national planning processes" (decision 10/CP.2, paragraphs 15 (b) and 15 (c)).

73. Despite the lack of specific guidance to non-Annex I Parties undertaking vulnerability and adaptation assessments, most reporting Parties presented information on their vulnerability to climate change and on adaptation options. However, Parties presented this information in different formats and in different sections of their communications.

Data acquisition

74. Among most significant constraints on the assessment of vulnerability and adaptation in non-Annex I Parties are the lack of data available to meet the demands of the methodologies that apply to these assessments, and the inability of Parties to conduct the type of vulnerability and adaptation assessments that would generate reliable results which could be incorporated into national planning processes. Data required as input to impact models and assessments are either not present (uncollected), inaccessible or inappropriate.

75. The lack of data arises because of inadequacies in data collection, monitoring and access to existing databases, and an incapacity to analyse, manipulate and improve quality assurance in some data sets. Therefore there is a need to enhance national expertise and institutional capacity to systematically collect, analyse and maintain appropriate data and databases, and to assess vulnerability and the economic and social costs of implementing adaptation measures.

76. Furthermore, data required for developing regional climate change scenarios are unavailable in some cases; in others they are too coarsely resolved, both in time and in space, to be useful for vulnerability and adaptation assessments (for example, on small islands and in mountainous regions/countries). The number of variables is often limited (for example, daily precipitation is often not available for input to impact models), or derived variables relating to extreme events are unavailable. In cases where necessary variables are available, large uncertainties occur within climate scenarios and therefore only broad sensitivity studies can be conducted.

77. The matter of lack of data for vulnerability and adaptation assessment could be addressed partly through the urgent implementation of decisions 14/CP.4 and 5/CP.5 on "Research and Systematic Observation", provided there is a particular focus on data requirements for vulnerability and adaptation assessments.

Institutional issues relating to the preparation and reporting of vulnerability and adaptation assessments

78. The CGE noted that a lack of institutional arrangements limits the utility of existing vulnerability and adaptation studies due to a number of factors: lack of appropriate institutions and infrastructure to conduct systematic data collection, insufficient or no institutional arrangements to undertake regional assessments addressing transboundary issues (along drainage basins for example), poor coordination within and or between the different government departments and agencies, the absence of universities and or research centres in smaller, poorer countries, and other cases where universities exist but are not necessarily engaged in vulnerability and adaptation assessment work.

79. The CGE acknowledged that incorporation of adaptation into national planning processes requires greater participation by policy makers and other stakeholders. Where decision makers are actively engaged in the process, countries can benefit through incorporating the findings of the assessments into strategic and development planning. The process of vulnerability and adaptation assessment is continuous and interacts with national planning, development and management processes. This implies that sustainable institutional structures are required to undertake vulnerability and adaptation assessments and integrate them into other national processes. The needs identified in order to address the sustainability of institutional structures include the establishment of permanent, appropriately skilled and resourced national teams.

Issues relating to capacity-building

80. Non-Annex I Parties have a general weakness in human resources and in their capacity to undertake vulnerability and adaptation assessments. These weaknesses include a lack of capacity in the use of impact models, including in their ability to adapt models to suit national

circumstances, in the development and application of socio-economic scenarios, and in the collection, quality control, archiving, retrieval, preparation and analysis of data relating to natural resources and biophysical processes required for vulnerability and adaptation assessment.

81. The critical role and the needs of climate change coordinators in improving national communications have been recognized, particularly with regard to vulnerability and adaptation assessments. The needs identified include training and support for climate change coordinators to enable them to bring together the range of expertise required both for conducting integrated assessments on a continuous basis and for training both in GEF procedures for the preparation of proposals and the follow-up of projects, and in making better use of local/regional expertise, research organizations and universities.

IV. RESEARCH AND SYSTEMATIC OBSERVATION

82. The CGE addressed the issue of improving the support for, and reporting of, research and systematic observation, and made the corresponding recommendations in accordance with subparagraphs 5 (a) and 5 (c) of its terms of reference.

83. The CGE found that all reporting Parties included information on their activities and programmes relating to the implementation of Article 5 of the Convention on research and systematic observation, although the types of information to be included are not specified in the annex to decision 10/CP.2. Further analysis indicated that only a few countries have active involvement in observational projects at national, regional and international levels.

84. Most reporting Parties indicated that the lack of data and of the capacity to access and record, analyse, manipulate and manage data and databases, as appropriate, for GHG inventories, vulnerability and adaptation assessments, and the analysis of abatement options, is a major constraint in the preparation of their national communications.

85. Most reporting Parties recognized the significance of the El Niño-Southern Oscillation (ENSO) phenomenon and its impact (current and potential) on their economies and that they would have to strengthen their national meteorological services, climate monitoring activities and disaster management capabilities.

86. The needs identified by non-Annex I Parties in their national communications are as follows: training in the use of satellite monitoring equipment, rehabilitation and expansion of the network of climate stations, monitoring of climate, sea-level, coral reefs, water resources (including groundwater and glaciers), tropical cyclones and monsoons, and the development of early warning systems.

87. Many Parties mentioned that their participation in global observation systems such as the Global Climate Observing System (GCOS), the Global Terrestrial Observing System (GTOS), and the Global Ocean Observing System (GOOS), would enhance their capability to promote research cooperation between developing and developed countries, and between national and international research organizations.

V. GREENHOUSE GAS ABATEMENT ANALYSIS

88. The CGE addressed the issue of improving the support for and reporting of GHG abatement analysis, and made the corresponding recommendations in accordance with subparagraphs 5 (a), 5 (c) and 5 (e) of its terms of reference.

89. The review of national communications indicates that most Parties have undertaken some analysis of GHG abatement and have identified some abatement options. The CGE, however, found that Parties also had some difficulties in the preparation of abatement analysis and the identification of abatement options, as reported in their national communications.

90. The level of reporting on programmes containing measures for the abatement of GHG emissions and the enhancement of removal by sinks varied significantly among Parties. Some Parties presented a list of projects related to GHG emissions reductions, others provided information on methodologies and scenarios used to qualify potential measures, and others included abatement options aimed at reducing emissions. The variations in reporting may have been due to a lack of a common framework for reporting on abatement analysis.

91. The CGE observed that in most cases Parties had not been able to comprehensively assess the GHG abatement options they had identified. However, Parties indicated that further studies are required in order to provide detailed cost-benefit analyses that will allow the feasible assessment of these options as well as the evaluation of the joint benefits, and identify those entities that will bear these costs or to whom benefits will accrue.

92. The sectors covered in the abatement analysis tended to follow the categories specified in the GHG inventories. The number of non-Annex I Parties which reported on abatement options were, by sectors: 49 in energy, 31 in transport, 44 in forestry, 31 in agriculture, and 26 in waste. The extensiveness of the discussion on abatement options also varied. National criteria for the prioritization and selection of abatement options were generally not reported. This could be due either to the lack of Parties' research capacities, or to the lack of a common framework for dealing with specific issues.

93. Future emissions estimates were based mainly on the development of scenarios. In some cases, Parties generated scenarios within a sectoral context, and in other cases they undertook this within a regional and global context. The projection periods and the sectors covered also varied among Parties.

94. A number of non-Annex I Parties used models to project future emissions. In the energy sector, the most frequently used models were LEAP, ENPEP and MARKAL. Many Parties also applied simple projection methods to project emission reduction potentials.

95. Analysis of the cost of abatement options also varied among Parties. Some Parties provided cost-benefit analysis of abatement options, while others provided merely rough estimates of costs based on expert judgement. Similarly, few Parties used econometric models to perform optimization analysis in the energy sector.

96. In its review of the information on abatement options, the CGE noted that the capacity-building process initiated through bilateral and multilateral cooperation has been an important

factor in enhancing the analytical capability of non-Annex I Parties to undertake GHG abatement analysis.

97. Despite the fact that non-Annex I Parties have no obligations to reduce their emissions within any specific time-frames, some Parties indicated that their plans or projects could be implemented to reduce emissions if the necessary resources were available.

Methodological issues

98. The assessment of the impacts of abatement options was limited to economic aspects. The integration of environmental, social and economic impacts of abatement options was not considered, and there was a lack of analysis across sectors in the economy.

99. While some Parties reported on methodologies used, others did not. Where methodology was mentioned, the reported methodologies varied among Parties as well as among sectors. The range of tools used for abatement analysis included expert judgement, spreadsheets and models. Although several methodologies and tools were used to assess the abatement options in various sectors, many Parties faced difficulties because of an insufficiency of personnel trained to access and use appropriate models and methodologies.

100. Some technical difficulties were encountered in the estimation of emissions reduction associated with the implementation of identified measures. The technical potential for emissions reduction and the associated costs in some of the sectors were difficult to assess. Other problems identified included limited access to appropriate technologies for the development of integrated abatement strategies and policies.

Reporting issues: Use of the UNFCCC guidelines

101. In the UNFCCC guidelines, guidance on the reporting of information on abatement options refers only to programmes containing measures to address climate change. The guidelines do not provide a framework for reporting on abatement analysis undertaken or envisaged, nor do they provide guidance on how Parties might incorporate this information into the national planning processes aimed at promoting sustainable development.

Data acquisition

102. Significant constraints relating to the availability of data and information have been observed. As data are sectoral in nature and often country-specific, possibilities for a common approach to data acquisition and data management are limited.

103. No Party reported on the existence of specific institutional arrangements to handle data acquisition and database maintenance for abatement analysis.

VI. EDUCATION, TRAINING AND PUBLIC AWARENESS

104. The CGE addressed the issue of improving the support for and reporting of education, training and public awareness, and made the corresponding recommendations in accordance with subparagraphs 5 (a) and 5 (c) of its terms of reference.

105. The CGE noted that all reporting Parties had provided information on education, training and public awareness in varying levels of detail. In a number of countries these programmes had not been developed, and where the programmes did exist, their implementation was either weak or non-existent. Parties expressed concern, therefore, about the inadequacy of national programmes on education, training and public awareness relating to climate change for academic and research institutions, policy makers, practitioners in the media and industry, students and teachers in formal and non-formal educational systems, non-governmental and community-based organizations, and the public at large.

Education

106. The CGE found that many Parties had indicated their intention to incorporate environmental and climate change issues into formal education systems. Some Parties provided in their national communications detailed information on educational programmes initiated in the area of climate change, while others merely described their plans to incorporate it into formal education if appropriate expertise in this area were to become available. A few Parties, however, stressed that they consider education on climate change to be an important part of their national development and environment plans.

107. Many Parties had provided information on thematic lectures and courses they had organized on various aspects of climate change while others had initiated institutional cooperation with universities and other tertiary institutions. Some Parties indicated that they had participated in international and/or regional educational programmes and workshops, had developed excellent teaching materials on the environment and/or climate change and had published their climate change studies. Others have yet to undertake some or all of these activities.

108. The CGE recognized the importance of using local communities' expertise and collaborating with non-governmental organizations and the private sector in the preparation of climate change educational materials, and in promoting awareness, education and training.

109. Furthermore, the importance of incorporating the issue of climate change into primary and secondary educational programmes by means of curricula reform was also emphasized by several Parties. Others made mention of existing and/or planned climate change programmes for undergraduate and postgraduate studies. Academic curricula on environment, energy and atmospheric studies have been revised in some countries to include elements of climate change.

110. Some Parties indicated that they had prepared educational materials for government experts as well as awareness materials for the general public and for local communities. Others have indicated plans to undertake activities such as the establishment of libraries and the granting of scholarships in support of their educational programmes.

Training

111. The CGE found that, for many Parties, the only training activities and workshops organized in the area of climate change were those which took place as part of activities relating

to the preparation of their initial communications, in the areas of GHG inventories, vulnerability and adaptation assessments and GHG abatement options.

112. Most Parties considered that their capability to organize and/or participate in regional and international exchange training programmes and workshops was extremely important. These training activities were designed mainly for government policy makers and national experts and were rather limited in scope. Parties therefore expressed the need to provide training for specific technical and policy issues relating to climate change and sustainable development. Some Parties also indicated that they lacked the capacity to formulate climate change project proposals in the required format or to access bilateral and multilateral funds for project development and implementation.

113. Several Parties mentioned that they lacked sufficiently trained scientific and technical personnel, as well as policy makers, in the field of climate change to carry out Parties' obligations under the Convention effectively. A number also stressed their lack of institutions and the incapacity of existing institutions to carry out research and training on climate change issues in order to satisfy the reporting requirements of the UNFCCC to improve understanding of local and regional impacts of climate change.

114. Some Parties further mentioned that they lacked the institutional and technological capacity to assess public awareness needs relating to the causes and impacts of climate change and to the development and implementation of relevant public awareness programmes and activities.

Public awareness

115. Several Parties noted that public awareness is an important factor in the dissemination of information relating to climate change issues and they expressed the view that this aspect has not been adequately addressed, especially in ongoing enabling activity projects. They stressed that raising the interest of the general public in climate change is a major challenge for most non-Annex I Parties. As a result of efforts at national and international levels to address this problem, awareness of environmental issues is gradually improving; however, further efforts are required to help the general public to understand the issue of climate change.

116. The content of public awareness materials needed by developing country Parties varied widely, ranging from general information on environmental and climate change concerns to more specific information on vulnerability assessments, the benefits of certain GHG abatement and adaptation options, and energy and natural resources conservation. Most Parties indicated that the public awareness activities that they had initiated had included the organization of workshops at national and regional levels for the purpose of information sharing, the presentation to the public of the results of research studies, the organization of climate change awareness surveys, the development of national environmental information and/or training centres, the development of national or regional information networks and/or clearing houses, and the dissemination of scientific, legal and technical information.

117. In some countries the dissemination of information for the purpose of increasing public awareness took place through diverse materials and means, including pamphlets, brochures,

newsletters, articles in newspapers, the publication of studies, information kits, teaching materials, CD-ROMs, the Internet, audiovisual materials, radio, television, posters, exhibitions, and public talks and meetings.

118. Furthermore, many Parties indicated that they needed to ensure the active participation of major stakeholders, including non-governmental organizations, the private sector and community-based organizations, in the formulation of strategies and the preparation of materials for raising public awareness of environmental and climate change concerns.

Reporting issues: Use of the UNFCCC guidelines

119. Although the guidance given in the UNFCCC guidelines for reporting on national programmes relating to education, training and public awareness was found to be inadequate, many Parties have provided more information than was required by the guidelines. Such information included national efforts aimed at elaborating and implementing activities and programmes relating to education, training and public awareness in accordance with Article 6 of the Convention. The CGE noted, however, the possibility for further elaboration of the UNFCCC reporting guidelines in order to facilitate better reporting of actions initiated or planned in respect of education, training and public awareness.

VII. INFORMATION AND NETWORKING

120. The CGE addressed the issue of improving the support for and reporting of information and networking, and made the corresponding recommendations in accordance with subparagraphs 5 (a) and 5 (c) of its terms of reference.

121. Many non-Annex I Parties perceive issues of information and networking as being central to their implementation of the UNFCCC and so these tend to be raised, either implicitly or explicitly, in various parts of their initial national communications.

122. Information and networking in the context of the initial national communications generally refers to several interrelated activities that assist a Party in the preparation of its initial national communication. The use of information systems forms an important part of GHG inventories, vulnerability and adaptation assessment and GHG abatement analysis. Networking has a more encompassing function and refers to the national, subregional, regional and interregional as well as global processes which provide easy access to information, advice and guidance in the process of the preparation of national communications. In the case of the initial national communications examined, however, differentiation between these activities is often difficult.

123. The exchange of information relating to national GHG inventories, vulnerability and adaptation assessments and GHG abatement analysis amongst the countries within a region and between regions is at present very weak. The exchange of information through a network of teams, experts and institutions is considered to be important in enabling the sharing and use of experiences, expertise skills, technology and data. Except for regional or multi-country projects, there is little exchange of information or networking of experts between countries and regions. Thus, the development of information networks and efficient databases would enable countries to

share experiences and expertise/skills, and to exchange information and data, thereby improving the national GHG inventories and vulnerability and adaptation assessments and GHG abatement analysis.

124. In preparing their initial national communications, non-Annex I Parties face a number of particularly difficult challenges in the area of information and networking, and if these challenges are not addressed, the quality of subsequent communications may eventually be affected. These challenges include: limited human and financial resources, limited data and information, and underdeveloped systems for collecting, processing and maintaining data and information.

125. Effective access to data, information and expertise is limited by two significant factors. First, much of the data and information are often not organized or structured in a "user friendly" manner. Second, the current ability of most institutions in most developing countries to access the Internet in a consistent, efficient and cost-effective manner is severely limited due to the absence of essential infrastructure.

126. The ability of most institutions in developing countries to participate in media such as videoconferencing is even more limited, due to the fact that these activities require both more powerful computers and more powerful communication channels.

127. The CGE found that many countries have expressed the need for assistance in identifying specific measures for disseminating information and promoting institutional development. Further examination of the national communications reveals that there is a need to develop information and networking mechanisms for sharing information on climate change. This would facilitate better coordination among the numerous levels of policy- and decision-making. Parties stressed that difficulties associated with networking and information are key barriers to ensuring the sustainability of efforts in the preparation of national communications.

128. National databases, models and expertise (together with internationally agreed guidelines for ensuring consistency and transparency) were considered to be among the most important foundations for the preparation of national communications. Nevertheless, limitations in national systems can be ameliorated in part through the creation and strengthening of regional and international networks as well as greater access to, and use of, cutting-edge communication technologies.

129. Parties expressed concern about the lack of hardware, software and expertise for establishing and maintaining networking facilities for the exchange of information. The lack of financial, technical and human resources limits the capacity of institutions to coordinate climate change activities effectively and thus to improve the national communication process.

130. Climate change national focal points lack the capacity and support needed to coordinate and implement climate change activities efficiently at the national level and to participate in sub-regional, regional and international climate change initiatives. These weaknesses, together with the lack of national institutional frameworks involving the establishment of climate change committees and teams of technical experts, make the preparation of national communications difficult. This affects countries' capacity to integrate climate change concerns into the national planning process on a sustainable basis.

Reporting issues: Use of the UNFCCC guidelines

131. The annex to decision 10/CP.2, providing reporting guidance for the preparation of the initial national communications of non-Annex I Parties, does not specifically request Parties to report on information and networking. However, paragraphs 15 to 22 of the guidelines do provide an opportunity for Parties to include information that they identify as an important element in their efforts to meet their commitments under the UNFCCC.

VIII. FINANCIAL AND TECHNICAL SUPPORT PROGRAMMES

132. The CGE addressed the issue of the availability of financial resources and technical support, and made the corresponding recommendations in accordance with subparagraphs 5 (a), 5 (b) and 5 (d) of its terms of reference.

Support programmes[1]

133. A number of multilateral and bilateral programmes have so far provided financial and technical support to 137 non-Annex I Parties for the preparation of their national communications. The GEF, as an operating entity of the financial mechanism of the UNFCCC, provided most of the financial and technical support for the preparation of national communications. In addition, bilateral support, mainly from Annex II Parties, was provided to non-Annex I Parties through a number of bilateral agencies from various individual governments. These included: the United States Country Studies Program (USCSP), the German Technical Cooperation Agency (GTZ), the Netherlands Climate Change Studies Assistance Programme (NCCSAP), the Finland Climate Change Assistance Programme, and the Governments of New Zealand and Greece.

134. Additionally, a number of Annex II Parties have also provided financial and technical support to non-Annex I Parties in undertaking various climate change related activities, such as training courses, workshops, projects and programmes, which are not directly related to the preparation of national communications. These Parties include Australia, Denmark, Japan, Italy, Spain and the United Kingdom.

135. A total of 24 support programmes was reviewed. Fifteen of these relate to the preparation of national GHG inventories, vulnerability and adaptation assessments and abatement analysis. Only a small number of programmes addressed research and systematic observation and education, training and public awareness.

Availability of funding

136. Approximately US$ 133.7 million has been provided to 137 non-Annex I Parties in the form of financial and technical support for activities that directly support either: (a) the preparation and submission of national communications or (b) the preparation of various elements of national communications. Approximately US$ 79.6 million (60 per cent) of this

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[1] The support programmes are those activities, projects and programmes which support (i) the preparation and submission of national communications, and (ii) the preparation of various elements of the national communication (e.g. national GHG inventories, vulnerability and adaptation assessments, abatement analysis).

amount was provided through a multilateral programme, the GEF Enabling Activities Programme, and approximately US$ 54.1 million (40 per cent), was provided through bilateral programmes (see table 1).

137. Support from the GEF Climate Change Enabling Activities Programme was provided through expedited and full projects (standard approval procedures) for the preparation of national communications, and full-cycle projects for the preparation of limited components of national communications. This constituted the largest portion of the "allocatable" programmes, supporting 137 non-Annex I Parties with approximately US$ 79.6 million in funding. This represents approximately seven per cent of the funds allocated to the GEF climate change focal area for the period February 1995 to July 2000.[2]

138. The GEF programmes include the National Communications Support Programme (NCSP), a US$ 3.4 million programme, which comprises US$ 2.1 million from the GEF and approximately US$ 1.3 million co-financing from Denmark, the European Community, Finland and Norway, and which provided technical assistance to 130 non-Annex I Parties, including countries in eastern Europe and the Commonwealth of Independent States, through thematic subregional exchange workshops, technical reviews, a help desk and networking. Many Parties indicated that this programme played an important role in the preparation of their national communications and that they would therefore like the programme to be continued.

139. The USCSP has provided approximately US$ 30 million to support the preparation of national GHG inventories, the assessment of mitigation options, and vulnerability and adaptation assessments, as well as the development of climate change action plans in 49 countries, including 15 non-Annex I Parties in Africa, 13 in Asia and the Pacific, and 14 in Latin America and the Caribbean. The GTZ, with an estimated US$ 9.0 million to 2003, has so far provided approximately US$ 3.5 million for abatement analysis, national GHG inventories and assessment of adaptation options in 18 countries, including seven non-Annex I Parties in Asia, four in Africa and one in Latin America and the Caribbean. The NCCSAP has mainly supported the preparation of vulnerability and adaptation assessments in 13 non-Annex I Parties with its funds of US$ 4.8 million.

140. The Finland Climate Change Assistance Programme supported the strengthening of meteorological and hydrological infrastructure in the amount of US$ 2.5 million in order to produce relevant information for climate change research, including support for the preparation of the national communication of Nicaragua. The Governments of New Zealand and Greece also provided support, respectively, for the training of experts from 12 Pacific Island countries in vulnerability and adaptation assessments, and to enable some countries of the Balkan region to develop policies to limit GHG emissions.

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[2] The total figure of the GEF climate change focal area (including the pilot phase) was approximately US$ 1 052 billion for the period February 1995 to July 2000.

Table 1. Support programmes[1]

Projects	GEF funding[a] (US$)	Non-GEF funding (US$)	Total funding (US$)
A. Programmes directly supporting submission of national communications			
GEF – Climate Change Enabling Activities Expedited Projects	23,080,000[b]		23,080,000
GEF – Climate Change Enabling Activities - Full Projects	17,480,000[b]	549,450[c]	18,029,450
GEF/UNDP/UNEP – National Communications Support Programme (NCSP)	2,155,000[d]	1,292,400	3,447,400
Subtotal	**42,715,000**	**1,841,850**	**44,556,850**
B. Programmes supporting components of national communications[e]			
GEF/UNEP – Country Case Studies of Sources and Sinks of Greenhouse Gases	4,500,000[b]		4,500,000
GEF/UNEP – Economics of GHG Limitations – Phase I	3,000,000	250,000	3,250,000
GEF/UNEP – Country Studies on Climate change Impacts and Adaptation Assessments	2,000,000		2,000,000
GEF/UNDP – Asia Least-Cost Greenhouse Gas Abatement Strategy (ALGAS)	9,500,000	592,000	10,092,000
GEF/UNITAR – CC:TRAIN – Phase I	900,000		900,000
GEF/UNITAR – CC:TRAIN – Phase II	2,700,000	337,200	3,037,200
GEF/UNDP – Building Capacity in Maghreb	2,500,000		2,500,000
GEF/UNDP – Building Capacity in Sub-Saharan Africa	2,000,000		2,000,000
GEF/World Bank – Regional Planning for Adaptation to Climate Change	6,300,000	345,000	6,645,000
GEF/UNDP – China: Issues and Options in GHG Emissions Control	2,000,000		2,000,000
GEF/UNDP – India: Cost-Effective Options for Limiting GHG Emissions	1,500,000		1,500,000
UNITAR – Certificate Training Course of Climate Change Vulnerability and Adaptation Assessment		337,200[f]	337,200
UNITAR – Policy Development Workshops to Support the Implementation of the Convention		841,803[f]	841,803
UNITAR – Technical Workshops to Support the Implementation of the Convention		907,831[f]	907,831
Netherlands Climate Change Assistance Program (NCCSAP)		4,800,000	4,800,000
Germany – Measures to Implement the UNFCCC		9,000,000	9,000,000
United States Country Studies Program (USCSP)		30,000,000	30,000,000
Finland – Support to the Implementation of the UNFCCC in Nicaragua		2,500,000	2,500,000
New Zealand – Pacific Islands Climate Change Vulnerability and Adaptation Certificate Course		125,000	125,000
UK – Climate Impacts Research		1,580,000	1,580,000
Greece – Capacity-Building to Deal with the Climate Change Problem		683,000	683,000
Subtotal	**36,900,000**	**52,299,034**	**89,199,034**
Total funding for national communications	**79,615,000**	**54,140,884**	**133,755,884**

Notes:
a. Unless otherwise stated, GEF funding data comes from FCCC/SBI/2000/INF.8.
b. FCCC/CP/2000/3/Add.1 reports (i) US$ 25,222,292 for expedited projects, (ii) US$ 11,062,000 for full projects and (iii) US$ 4.7 million for GEF/UNEP – Country Case Studies of Sources and Sinks of Greenhouse Gases.
c. Non-GEF funding provided to the GEF/UNDP/UNITAR Pacific Islands Climate Change Assistance Programme. Source: FCCC/SBI/2000/INF.9.
d. FCCC/SBI/2000/INF.2 and FCCC/SBI/2000/INF.8 both list the GEF as providing approximately $3.2 million to NCSP, however, additional information provided by the GEF Secretariat indicates that GEF funding for NCSP is US$ 2,155,000.
e. Funding for these projects was provided by GEF and other agencies such as BUWAL, GEIC and the Government of New Zealand, but it was not possible to allocate the support as GEF or non-GEF funding. Source: FCCC/SBI/2000/INF.9.

[1] Support programmes are those activities, projects and programmes which support (i) the preparation and submission of national communications, and (ii) the preparation of various elements of the national communication (e.g. national GHG inventories, vulnerability and adaptation assessment, abatement analysis).

141. In terms of the actual amount of funding from the GEF Climate Change Enabling Activities Programme, non-Annex I Parties in Asia and the Pacific have received approximately US$ 37 million. Latin America and the Caribbean has received approximately US$ 21 million, and Africa has received approximately US$ 18 million. Approximately US$ 2.54 million from the GEF Climate Change Enabling Activities Programme was allocated to five countries in Eastern Europe (Estonia, Hungary, Lithuania, the Republic of Moldova and Poland), and approximately US$ 2.1 million was allocated to Armenia, Azerbaijan, Georgia, Tajikistan, Turkmenistan and Uzbekistan.

Programme coverage

142. So far, 85 per cent of non-Annex I Parties have received support from the GEF Climate Change Enabling Activities Programme (that is, expedited, full projects and limited components of national communications). Three non-Annex I Parties (Israel, the Republic of Korea and Singapore) did not receive any support, 40 Parties received assistance from one support programme, 31 Parties received support from two programmes, 36 Parties received support from three programmes, 14 Parties received support from four programmes, 15 Parties received support from five programmes, and one Party (Indonesia) received support from six programmes.

143. The GEF assistance was provided mainly for the preparation of national GHG inventories, abatement analysis, and vulnerability and adaptation assessments, as well as capacity-building and public awareness in these areas. From the GEF expedited procedures, approximately 32 per cent of funds was allocated to national GHG inventories, 30 per cent to vulnerability and adaptation assessments, 23 per cent to GHG abatement analysis, and 15 per cent to other areas such as capacity-building, compilation, publication of the national communication, and research and systematic observation. From the full projects, 43 per cent of funds were allocated to national GHG inventories, 31 per cent to vulnerability and adaptation assessments, 19 per cent to GHG abatement analysis, and 7 per cent to other areas, while the GEF full-cycle projects for preparation of the limited components of national communications provided 12 per cent of funds to GHG inventories, 22 per cent to vulnerability and adaptation, 43 per cent to GHG abatement analysis, and 22 per cent to capacity-building and other activities. The bilateral programme support was provided mainly for the preparation of abatement analysis and national GHG inventories, as well as vulnerability and adaptation assessments and other activities that are not directly related to the preparation of national communications.

144. Twenty-nine non-Annex I Parties which received assistance from at least one support programme and 18 Parties which received funding from two or more of these programmes, including from the GEF Enabling Activities Programme, have submitted their national communications. In addition, three Parties (Israel, Singapore, the Republic of Korea) which did not receive financial support from any support programme have also submitted their national communications.

145. The analysis of funding and activities covered within existing support programmes seems to indicate that the level of funding and the number and scope of support programmes are not commensurate with the needs of non-Annex I Parties as identified in their national communications. Significant needs were also identified by Parties which are currently in the

process of preparing their national communications. These needs could be met only with additional financial resources and technical support.

PART THREE

I. RECOMMENDATIONS FOR FINANCIAL AND TECHNICAL SUPPORT

146. In considering the availability of financial resources and technical support, the CGE found that many needs relating to financial and technical support still exist, and new needs have been identified by non-Annex I Parties. These needs will require additional financial and technical support to improve the preparation of national communications.

A. National greenhouse gas inventories

Data acquisition

147. Adequate funding should be provided to build capacity to improve the collection of activity data and to develop emission factors, where appropriate, and information management systems for archiving and updating inventory data on a continuing basis, either in the context of enabling activities projects for the second national communications or as stand-alone activities.

148. The development of regional projects should be funded; such projects should include all non-Annex I Parties on request and should be aimed at improving the national capacity for collecting, processing and archiving activity data and the development of local and regional emission factors in all key sources.

149. In funding activities relating to the collection of activity data, and the development of local emission factors in all key sources, the criteria to be considered for funding should include: (a) when those emission factors are either not included in the IPCC Guidelines or are included but are inappropriate for the national circumstances of a given country, and (b) when emission estimates calculated using these emission factors constitute an important share of the total emissions.

Institutional strengthening

150. Appropriate institutional frameworks should be developed for collecting, updating and managing activity data necessary for the preparation of national inventories.

151. Collaboration and coordination among national institutions should be facilitated in order to enhance the quality of inventory preparation in the context of the second national communication.

152. National focal points under the Convention process should be encouraged, where necessary, to establish permanent technical climate change secretariats to undertake the technical work necessary for the preparation of national GHG inventories on a continuous basis.

Others

153. The IPCC Good Practice Guidance should be translated into all languages of the United Nations and appropriate training should be provided to the experts in charge of the preparation of the national GHG inventories.

154. The use of activity data from regional organizations, if available, should be encouraged, if these data are appropriate and complementary to the information being considered by a Party in preparing its national GHG inventory. The dissemination of these data is encouraged.

B. Vulnerability and adaptation assessment

Data acquisition

155. Existing observation/monitoring stations and network data retrieval should be strengthened and rehabilitated through the provision of equipment and the training of staff in the collection, archiving, analysis and use of data for vulnerability and adaptation assessment.

156. The capacity of national experts to access, analyse and manipulate biophysical, hydrological and socio-economic data for the purposes of vulnerability and adaptation assessment should be enhanced.

Institutional strengthening

157. Sustainable institutional capacities should be developed to support the identification and implementation of adaptation projects and programmes at the national level.

158. National/subregional/regional centres of excellence for vulnerability and adaptation assessments should be established or strengthened.

159. Climate change coordinators should be encouraged to utilize existing national expertise and capacities in vulnerability and adaptation assessments through closer collaboration with relevant institutions/agencies/organizations such as universities and national research agencies.

160. National experts should be supported to participate in the IPCC processes, particularly with respect to vulnerability and adaptation assessments.

Capacity-building

161. Provision of specialized training is required in order to upgrade the skills of climate change coordinators in:

(a) Creating and leading/managing appropriately skilled and resourced multidisciplinary teams responsible for vulnerability and adaptation assessments;

(b) Sensitizing policy makers and raising awareness of vulnerability and adaptation issues;

(c) Strengthening and maintaining the capacity to assess vulnerability and adaptation;

(d) Developing better coordination with national planning authorities and involving different stakeholders from civil society;

(e) Developing proposals for the funding and follow-up of projects relating to vulnerability and adaptation assessments.

162. There should be provision of guidelines/methods for assessing, evaluating and costing adaptation options, and training in the use of computer models and socio-economic tools, such as cost-benefit analysis and social impact analysis, which can be used to evaluate adaptation options, and to integrate vulnerability and adaptation issues into economic and development planning processes.

163. Scholarships should be awarded to national experts to increase their expertise in vulnerability and adaptation assessments and develop their capacity to carry them out. The improved expertise would strengthen the capacity of the centres of excellence to cooperate and collaborate with institutions and programmes at the national and international levels.

164. Cooperative research programmes should be developed amongst all Parties through the exchange of researchers and postgraduate students.

Others

165. Methods and manuals of vulnerability and adaptation assessment should be available in all languages of the United Nations, and available technical guidelines, methodologies and models should be adapted as appropriate to suit the circumstances of country Parties.

166. Additional guidance should be provided to the GEF with the aim of improving access to financial resources for vulnerability and adaptation assessments by non-Annex I Parties. The guidance should reflect the continuous and interactive nature of vulnerability and adaptation assessments.

C. Research and systematic observation

167. Decision 14/CP.4, in particular paragraph 3, and decision 5/CP.5, in particular paragraph 6, relating to research and systematic observations, should be implemented immediately.

168. The provision of monitoring systems and technology needed for research and systematic observations in developing countries and regions should be encouraged.

169. National meteorological services, climate monitoring and disaster management capabilities should be strengthened, and understanding of the El Niño-Southern Oscillation (ENSO), and particularly its effect on climate variability and extreme events, should be improved.

170. Training is required to enable national expertise to contribute to, and participate in, global research and systematic observational networks, including GCOS, GOOS, and GTOS.

D. Greenhouse gas abatement analysis

Data acquisition

171. Adequate financial and technical support should be provided for the enhancement of data and data collection systems, for the different sectors of the economy, where appropriate and relevant.

Capacity-building

172. Institutional and human resources are required to undertake the preparation of the abatement analysis, to improve the modelling and analytical capability of national experts, and to prepare abatement projects for funding.

Methodological issues

173. Adequate financial and technical support, as well as capacity-building, should be provided for:

(a) Accessing appropriate technologies for GHG abatement analysis and the identification of abatement options, and for the development of integrated abatement strategies and policies;

(b) Acquiring methods and tools for the generation of climate and socio-economic scenarios, at both the national and sectoral levels;

(c) Developing methodologies and tools for the analysis and selection of abatement options across sectors, according to national priorities (such as social, economic or environmental aspects).

Others

174. Further guidance should be provided to the GEF, as an operating entity of the financial mechanism of the Convention, in order to ensure that funding is made available to promote implementation of the improved reporting as recommended for inclusion in the revised guidelines.

E. Education, training and public awareness

175. Financial and technical support should be provided for:

(a) Training programmes which do not only address developing country Parties' needs for scientific and technical competence but which also seek to enhance the overall institutional effectiveness and efficiency of agencies and organizations which contribute to the preparation of national communications;

(b) Enabling relevant institutions which are involved in the preparation of national communications to purchase hardware and software as well as to train national experts to

develop and use systems for collecting, processing and analysing climate change information and for archiving and updating GHG inventories;

(c) National, subregional and regional centres of excellence to help facilitate the exchange of information and experience which enhances south-south and north-south cooperation;

(d) Developing country Parties wishing to improve the coordination of educational and training programmes at national, subregional, regional and global levels in order to maximize the efficient use of resources and to avoid duplication;

(e) The development of common methodologies and approaches for addressing the training and education needs of Parties while ensuring flexibility to allow regional and national differences and priorities;

(f) The development of mechanisms providing technical expertise, advice and information to developing countries within reasonably short time-frames;

(g) The development of regional initiatives and activities promoting information sharing;

(h) The creation and strengthening of national capabilities to develop public awareness materials, particularly on the adverse impacts of climate change, as well as on opportunities to mitigate climate change;

(i) The development of simplified materials containing basic information on climate change, such as recent scientific findings by the IPCC, information on regional and local impacts, and information on practical steps to follow for mitigating and responding to the negative effects of climate change. These should be prepared, periodically updated, translated into the official languages of the United Nations, and distributed;

(j) The development of regional climate change hotlines, teleconferences and a directory of national communications country coordinators;

(k) The participation of developing country experts in relevant IPCC and UNFCCC expert group meetings.

Other

176. The UNFCCC secretariat should be encouraged to develop, maintain and periodically update a clearing house mechanism on education, training and public awareness materials. Parties are also encouraged to support this effort by actively providing materials to the clearing house, particularly in languages that can be understood by peoples who do not use the official languages of the United Nations.

F. Information and networking

177. The development and maintenance of national web sites relating to capacity-building and information sharing should be supported through the acquisition and maintenance of hardware

and software which would enhance Parties' access to the Internet and enable better access to IPCC and UNFCCC documents.

178. Regional information networks and efficient national databases should be established, or developed, and supported to enable countries to use the information and share experiences, expertise/skills, data/information and training in the area of national GHG inventories, vulnerability and adaptation assessments and GHG abatement analysis. The UNFCCC secretariat could also make available the names of experts in the various fields who would participate in non-Annex I Parties' regional information networks.

179. The creation and development of a database on emission factors by the IPCC should be supported on the understanding that the information provided would address the needs of non-Annex I Parties in the preparation of their national GHG inventories. In addition, information resulting from research carried out in some non-Annex I Parties should be included in the database.

180. The limitations in national systems for information and networking can be ameliorated in part through three closely linked approaches:

(a) The creation and strengthening of regional and international networks which provide data, information, tools and expertise necessary to develop high-quality national communications;

(b) The facilitation of greater access to, and use of, cutting-edge communication technologies needed to support and strengthen these networks;

(c) Support for the strengthening of national, regional and international networks on a continuing basis.

181. Recommendations for addressing problems identified by Parties in the area of information and networking include:

(a) Encouraging the GEF and other donor organizations to direct resources to improving access to the Internet by climate change institutions in developing countries;

(b) Encouraging the UNFCCC secretariat, the IPCC, and other organizations providing climate-related information and services, to give increased attention to making these available through the Internet, CD-ROMs, and similar modern communication technologies, in as user-friendly a manner as possible, for instance in multiple languages;

(c) Encouraging donor organizations and in-country institutions to provide increased training in the use of the Internet and other modern communications technologies, as appropriate to the circumstances of individual countries;

G. Other financial and technical needs

182. Increased support should be given to non-Annex I Parties in Africa in all areas relevant to improvements in the process of the preparation of national communications.

183. Multilateral programmes, in particular the NCSP and other bilateral programmes supporting the preparation of national communications by non-Annex I Parties, should be continued. These programmes should be encouraged to include the promotion of national ownership of projects and should ensure that adequate resources are also made available for capacity-building, public awareness, information exchange and networking.

II. RECOMMENDATIONS FOR IMPROVEMENT OF THE IPCC METHODOLOGIES AND OTHER MODELS

184. The CGE wishes to make the following recommendations for the improvement of the IPCC methodologies and other models in accordance with paragraph 5 (c), (e), (f) and (g) relating to national GHG inventories, vulnerability and adaptation assessment and GHG abatement analysis.

A. National greenhouse gas inventories

185. The IPCC should be urged, in its future revision of the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, to reflect better the specific conditions and circumstances of non-Annex I Parties, particularly in the LUCF, energy, agriculture and waste sectors. For example:

(a) In the LUCF sector, clarity of the IPCC Guidelines should be improved with regard to the estimation of emissions and removals from managed forests and with regard to the definitions used. More and improved default values for non-Annex I Parties, for growth rates of biomass or release/storage rates relating to soil carbon, should be provided. Appropriate recommendations should be given on how non-Annex I Parties can use local classification of forests for inventory reporting. Recommendations should also be given for cases where data are not available for long timescales (for example, decades). The IPCC Guidelines should more clearly address the potential for double counting in the LUCF sector (for example, natural regeneration of forests could fit into the category of abandoned lands regrowing and/or into the category of changes in woody biomass stocks) and footnotes clarifying this issue should be included in the worksheets;

(b) In the energy sector, the future IPCC Guidelines should better reflect non-CO_2 emissions from biomass combustion in the household and industry sectors, ethanol use in the transport sector, and fugitive methane emissions from the flaring, extraction and processing of oil and gas;

(c) In the agriculture sector, appropriate consideration should be given to livestock, rice cultivation, and classification of agricultural soils and related emission factors for some non-Annex I Parties;

(d) The specific conditions of waste disposal, such as burning and/or use of open dumps, should be appropriately reflected in the methods for estimating emissions from waste.

186. In its future revision of the Guidelines, the IPCC should take into account all relevant literature in languages other than English, and specifically literature from non-Annex I Parties.

In addition, non peer-reviewed academic literature in other languages and from non-Annex I Parties could provide useful information.

B. Vulnerability and adaptation assessment

187. The IPCC and other research/scientific institutions should be encouraged:

(a) To develop methods and tools for assessing climate and non-climate related changes in economic, social and environmental systems within time-frames relevant for policy processes in non-Annex I Parties;

(b) To develop and enhance methods for identifying, characterizing, evaluating and prioritizing adaptation strategies, including methods for assessing the impacts of disasters and adaptation strategies in order to minimize impacts over the short term;

(c) To develop new methods and tools, especially ones easily understood and accessible, to facilitate integrated vulnerability and adaptation assessments that are compatible with the information resources, technical capabilities, economic systems and policy processes of non-Annex I Parties;

(d) To provide methodologies and models for impact studies on human health, human settlements, terrestrial ecosystems and tourism.

188. The development of methods for undertaking vulnerability and adaptation assessments in non-Annex I Parties should be supported, including the IPCC/GEF project, *Assessment of Impacts of and Adaptation to Climate Change in Multiple Regions and Sectors and the Adaptation Policy Framework*, being developed by the UNDP/UNEP/GEF's National Communication Support Programme in collaboration with some non-Annex I Parties.

C. Greenhouse gas abatement analysis

Methodological issues

189. The abatement analysis should be evaluated in terms of sustainable development criteria, which must include social, economic, environmental and institutional factors. All of these need to be fully assessed in order to prioritize abatement options, and to evaluate potential cross-sectoral impacts of those options.

190. A set of general but adequate technical guidelines as a basic framework for abatement analysis in the different sectors of the economy should be prepared to facilitate the analysis of abatement options, especially regarding the estimation of incremental costs and construction of emission scenarios.

III. RECOMMENDATIONS FOR IMPROVEMENT OF THE UNFCCC GUIDELINES

A. National circumstances

191. Guidelines for national circumstances should include an overview of the information which should be provided and linked to other sections of the national communication. In order

to avoid being prescriptive, the guidelines should provide a framework which would enable Parties to provide examples of best practice in the relationships between national circumstances, climate change and sustainable development.

192. Parties should provide a description of their national and regional development priorities, objectives and circumstances, and how these circumstances constitute the basis on which they will address climate change and its adverse impacts. The description of these circumstances could be organized under the following recommended headings as appropriate:

(a) Geographic profile (hydrology, coastal zones, geology, etc.)

(b) Climatic profile

(c) Population profile

(d) Economic profile

(e) Energy

(f) Transport

(g) Industry

(h) Mining

(i) Tourism

(j) Waste

(k) Agriculture and fisheries

(l) Forest

(m) Land use

(n) Health

(o) Environment

(p) Education and research institutions

(q) Other circumstances, such as literacy rate

193. Parties should provide a description of existing institutional arrangements which are relevant to the preparation of the national communications on a continuing basis.

B. National greenhouse gas inventories

194. In accordance with decision 8/CP.5 and in line with the experience gained by national experts from non-Annex I Parties in the use of the IPCC Guidelines for the preparation of national GHG inventories, the CGE recommends updating the inventory section of the UNFCCC guidelines in order to enhance the completeness and transparency of reporting.

195. Non-Annex I Parties should use the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories to estimate and report on anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol. In accordance with the Revised 1996 IPCC Guidelines, Parties may use all of the methods included in these Guidelines, giving priority to those methods which are believed to produce the most accurate estimates, depending on the data available. Parties can also use national methodologies that they consider to be better able to reflect their national circumstances, provided that these methodologies are compatible with the IPCC Guidelines and are well documented.

196. Non-Annex I Parties should be encouraged to use, as appropriate and as far as possible, the IPCC *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*.

197. Table II of the UNFCCC guidelines should be replaced by IPCC summary table 7A as the basis for summary reporting of GHG emissions and removals.

198. Non-Annex I Parties should be encouraged to provide worksheets, as provided in the IPCC reporting format, as an appendix to their national GHG inventories in the national communications. Worksheets or disaggregated calculations should be provided, preferably in an electronic format and in a hard copy.

199. Non-Annex I Parties should be encouraged to provide information on the data sources and references used to compile inventory data.

200. Non-Annex I Parties should be encouraged to use the IPCC notation keys: "NO" for "not occurring", "NE" for "not estimated" and "NA" for "not applicable".

201. Non-Annex I Parties should be encouraged, as far as possible, to report HFC emissions.

202. Non-Annex I Parties should be encouraged, as far as possible, to estimate and report CO_2 fuel combustion emissions using both sectoral and reference approaches, and to explain any large differences in the estimates.

203. When a non-Annex I Party wishes to present its GHG emissions and removals in CO_2 equivalents, that Party is encouraged to use the latest Global Warming Potential for various gases recommended by the Conference of the Parties.

C. Vulnerability and adaptation assessment

204. The recommendations for the elaboration of new guidelines took into consideration the transparency of vulnerability and adaptation assessments, the integration of vulnerability and adaptation issues into national planning processes, and the development and use of "good practices" in vulnerability and adaptation assessments.

205. There is a need to revise the annex to decision 10/CP.2 to give an appropriate framework for vulnerability and adaptation assessment, including guidelines for incorporating adaptation options into national planning processes.

206. The new reporting guidelines on vulnerability and adaptation assessment should include a separate chapter on vulnerability and adaptation assessment within the national communication. Information to be communicated may include among other things:

(a) Current vulnerabilities and experience in adaptation, including the elaboration of stakeholder involvement in disaster preparedness and in dealing with extreme events;

(b) Methodologies/approaches, including the scenarios used;

(c) Sectors assessed and sectors not covered by the assessment;

(d) Results of the assessment;

(e) Gaps in data and monitoring;

(f) Constraints or difficulties encountered;

(g) Capacity-building needs for future vulnerability and adaptation assessments;

(h) Potential adaptation measures;

(i) Prioritization and costing of adaptation measures;

(j) Interrelationships between vulnerability and adaptation assessments and national development priorities;

(k) Actions to integrate adaptation options into existing or future sustainable development plans.

207. Non-Annex I Parties should be encouraged to use or include any other approaches/best practices and the technical guidelines provided by the IPCC, as appropriate, in vulnerability and adaptation assessments.

208. Vulnerability and adaptation assessments should be focused on, but not limited to, the following sectors: agriculture, water resources, coastal zones and marine ecosystems, terrestrial ecosystems, human health and settlement, fisheries, land-use, land-use change and forestry, and ecosystems, desertification and land degradation, industry and energy.

D. Research and systematic observation

209. Non-Annex I Parties should be encouraged to report on their activities and programmes and to identify constraints, gaps and future needs in accordance with Article 5 of the Convention, and decisions 14/CP.4, and 5/CP.5 paragraphs 7 and 8, and the guidelines contained in document FCCC/CP/1998/7.

E. Greenhouse gas abatement analysis

210. The revision of reporting guidelines which would lead to the provision of detailed information on mitigation analysis and assessment of abatement options should not be perceived as obliging developing country Parties to reduce emissions within any specific time-frame. The

inclusion of more detailed guidance on this matter is purely for the attention of Parties who may wish to include the abatement options and assessments in their national communications.

211. In order to improve the quality, transparency and comparability of the abatement analysis, non-Annex I Parties should be encouraged to use any of the following resources on the analysis of abatement options: *Technologies, Policies and Measures for Mitigating Climate Change (IPCC Technical Paper I); Greenhouse Gas Mitigation Assessment: A Guidebook (USCSP); Climate Change 2001: Mitigation – A Report of WGIII of the Intergovernmental Panel on Climate Change*.

212. The guidelines should also encourage the use of appropriate tools. Although tools may include a variety of models in some sectors, such as LEAP, ENPEP or MARKAL, the usefulness of simpler methods should not be overlooked. In building scenarios, methodologies which consider national circumstances should be encouraged. There is also a need for clear definitions and/or terminology regarding the sectors, units, indicators, parameters and country-specific assumptions used in abatement analysis and reporting.

F. Education, training and public awareness

213. Information in national communications could include:

(a) Existing programmes and activities of institutions including information centres which promote education and training in, and public awareness of, climate change;

(b) Future plans to create or strengthen such programmes;

(c) Existing expertise in institutions which promote education and training in, and public awareness of, climate change;

(d) Scholarship programmes offered at different academic levels to enhance expertise in the area of climate change;

(e) Efforts made to include climate change issues in the curricula of the different levels of the education system, and the results of such initiatives;

(f) The nature and extent of public participation in climate change related processes;

(g) Needs for financial and technical support to address national concerns relating to education, training and public awareness.

G. Information and networking

214. In view of the importance of information and networking to achievement of the ultimate objective of the UNFCCC, it may be desirable to include some specific references to information and networking in the guidance provided to non-Annex I Parties for the preparation of their national communications.

H. Other

215. Non-Annex I Parties should be encouraged to include in their communications a description of financial resources and technical support received for the preparation of national communications.

216. A framework should be developed to facilitate complete and transparent reporting of assistance provided by multilateral and bilateral programmes in support of the preparation of national communications. This should include details of the technical areas of support, and reasonably clear definitions of the nature and scope of these areas.

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